

# Gov. Kaine's Commission on Climate Change

## An Overview

L. Preston Bryant, Jr.  
Secretary of Natural Resources



# Overview

- Intergovernmental Panel on Climate Change
- Executive Order 59
- Commission Charge and Work Plan
- GHG emissions in Virginia



# **Intergovernmental Panel on Climate Change**

## Quick Facts from the IPCC Reports



# Observations from Intergovernmental Panel on Climate Change

- Warming of the climate is unequivocal.
  - increasing global average air and ocean temperatures
  - widespread melting of snow and ice
  - rising global average sea level



# Observations from Intergovernmental Panel on Climate Change

- Global average warming in the past century – 0.74°C (1.3°F).
- Most observed increases in globally averaged temperatures since the mid-20th century are very likely due to man-made GHG concentrations.
- Continued GHG emissions at or above the current rates would cause climate changes in the 21st century that very likely will be larger than those observed in the 20th century.



# Observations from Intergovernmental Panel on Climate Change

- U.S. temperatures warmed during the 20th century and into the 21st century.
  - temperatures are now 0.56°C (1.0°F) warmer than at the start of the 20th century
  - there is an increased rate of warming over the past 30 years.



# Observations from Intergovernmental Panel on Climate Change

- All of the U.S. is very likely to warm during this century, and most areas of the U.S. are expected to warm by more than the global average.
- Average warming in U.S. is projected to exceed 2°C (3.6°F) by the end of this century.
  - 5 of 21 models from IPCC project average warming in excess of 4°C (7.2°F)





So what can we  
do in Virginia?





# Executive Order 59

- Recognizes steps that Virginia has already taken to combat climate change:
  - Legislative establishment of a renewable portfolio standard
  - Joining the Climate Registry
  - Aggressive pursuit of conservation and efficiency in the Virginia Energy Plan and Executive Order 48
- Additional tools and resources are needed.



# Executive Order 59

*"I am hereby formally establishing the Governor's Commission on Climate Change to prepare a Climate Change Action Plan for Virginia that identifies the additional steps that must be taken to achieve the goal of reducing greenhouse gas emissions by 30 percent by 2025."*



# Executive Order 59

## Climate Change Action Plan:

1. Inventory the amount of and contributors to Virginia's greenhouse gas emissions, and projections through 2025;
2. Evaluate expected impacts of climate change on Virginia's natural resources, the health of its citizens, and the economy, including the industries of agriculture, forestry, tourism, and insurance;



# Executive Order 59

## Climate Change Action Plan:

3. Identify what Virginia needs to do to prepare for the likely consequences of climate change;
4. Identify the actions (beyond those identified in the Energy Plan) that need to be taken to achieve the 30% reduction goal; and
5. Identify climate change approaches being pursued by other states, regions, and the federal government.



# Executive Order 59

- Chaired by Secretary of Natural Resources
- Ex officio members include the Secretaries of Commerce and Trade, Transportation, and Energy Policy Advisor
- 1 year to complete work
- Report due December 15, 2008



# Governor Kaine's charge

- Climate change may have a profound impact on Virginia – especially because we are a coastal state
  - Virginia has 112 miles of coastline and 3,300 miles of tidal shoreline.
- States' actions can make a difference
  - Virginia, North Carolina, and South Carolina's GHG emissions together equal the emissions of South Korea.
- Would like for this Commission's work to be the basis of smart, common-sense, science-based policy that can be considered next year and be held up to other states.
- Last year in office will be "Year of the Environment and Energy."





# Work Plan

- 8 meetings
- Held in Richmond and at universities around the Commonwealth
- Each meeting will include
  - a commission roundtable
  - a public comment period





# Meeting #1 (Richmond)

- February 2, 2008
- Received charge from Governor Kaine
- Executive Order 59
- Virginia Energy Plan & Executive Order 48
  - Greenhouse gas reduction goal
  - Emphasis on energy efficiency, conservation, renewable energy, carbon capture and storage
  - Energy Policy Advisory Council
- Discussed and adopted Work Plan
- Virginia Greenhouse Gas Inventory



# Meeting #2 (UVA)

- March 27, 2008
- Intergovernmental Panel Climate Change: Findings, Process
- Miller Center Climate Change Initiative
- Summary of local, state, and regional approaches to addressing climate change
- Federal approaches to addressing climate change
- Major sources of GHG emissions
- The role of nature in capturing and storing carbon emissions



# Meeting #3 (William & Mary)

- April 22, 2008
- Voluntary actions undertaken by industry
- Industry experience with actions taken by other states and regions to address climate change
- Expected impacts of climate change on Virginia
  - To the Chesapeake Bay ecosystem
  - To natural systems
  - To fisheries and wildlife
  - To public health



# Meeting #4 (GMU)

- May 13, 2008
- Expected economic impacts of climate change on Virginia
  - Sea-level rise, severe weather and the built environment
  - Ports
  - Military installations
  - Insurance industry
  - Tourism
- Economic opportunities
  - Green investing
  - Emerging technologies
  - Case studies: emerging trends in the marketplace
- Lessons learned from actions taken by other nations



# Meeting #5 (Virginia Tech)

- June 17, 2008
- Congressman Boucher: federal legislation
- Actions to address climate change being undertaken by Virginia localities
- Connection between climate change and development patterns
  - The effect of compact development on GHG emissions
  - Building practices, energy use management, and codes
  - Transportation choices
- Adaptation
  - Food supply
  - Vulnerable wildlife
  - Land use
  - Infrastructure
  - Emergency preparedness
- Stakeholder recommendations



# Remaining meetings

## Meeting 6 (Richmond)

- Cost-benefit analyses of potential strategies identified in meeting 5
  - Expected contribution to 30% reduction goal
  - Costs to industries and consumers
- Begin discussion of recommendations
- Public hearing

## Meeting 7 (Richmond)

- Continue to discuss recommendations

## Meeting 8 (Richmond)

- Finalize recommendations
- Review draft report





# DEQ's 1<sup>st</sup> GHG Inventory

- Dominated by energy production & use
- Other sources contribute lesser amounts
- Developed for 2005 and 2006
- Covers CO<sub>2</sub>, Methane, Nitrous Oxide, and Fluorine Compounds
- Hybrid methodology used:
  - State specific data for electric power and motor vehicle sectors
  - EPA default estimates for most other sectors
- Electric sector approach – covers both production & consumption





# Energy Use

Largest emission sector by far – 89%

- Power generation & use (38%)
  - In-state power plant emissions
  - Electricity imports
- Transportation (32%)
  - Motor vehicle emissions
  - Non-road equipment
- Other fossil fuel use (19%)
  - Total fuel use by all other sources

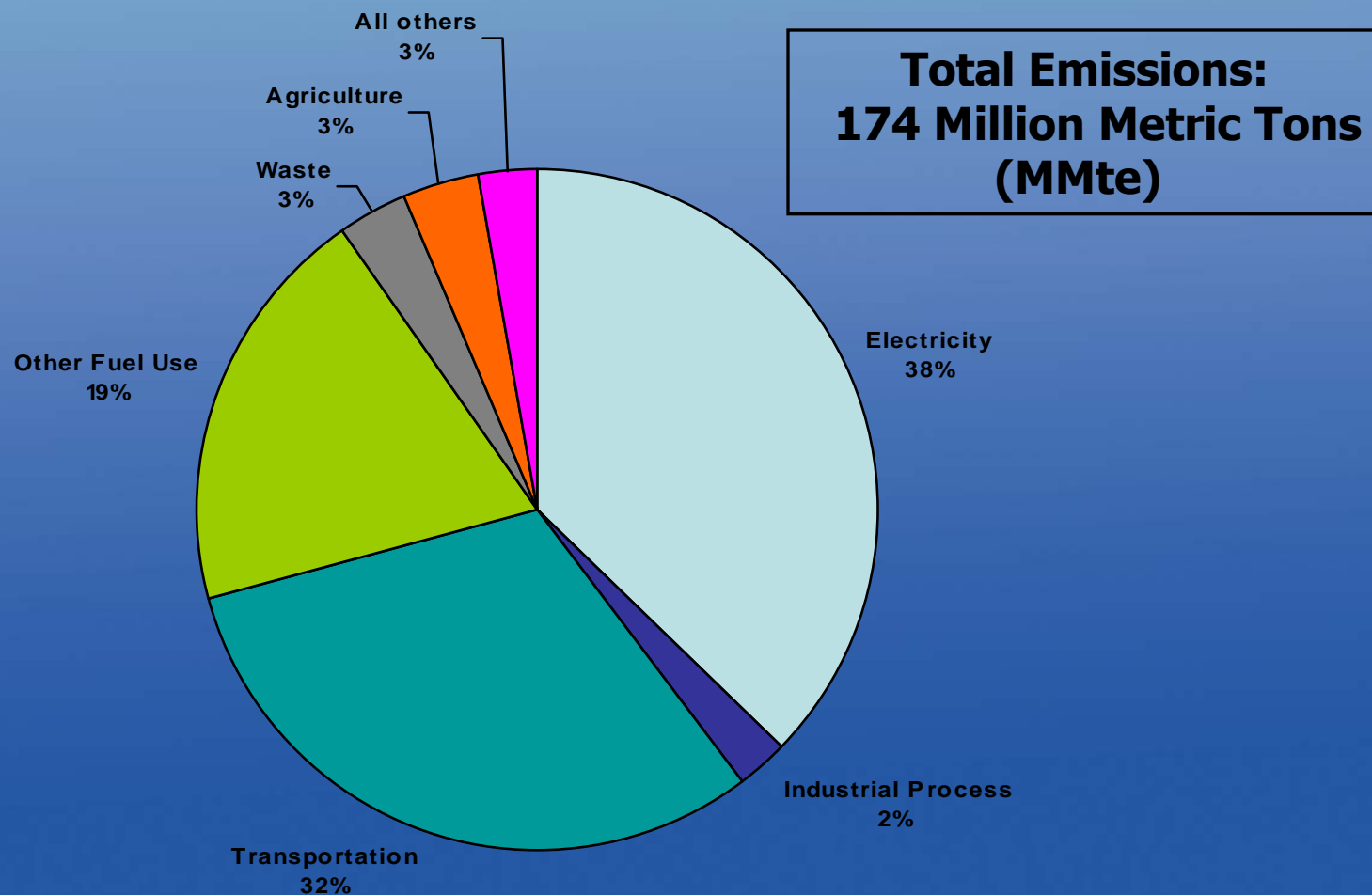


# Other Emissions Sources

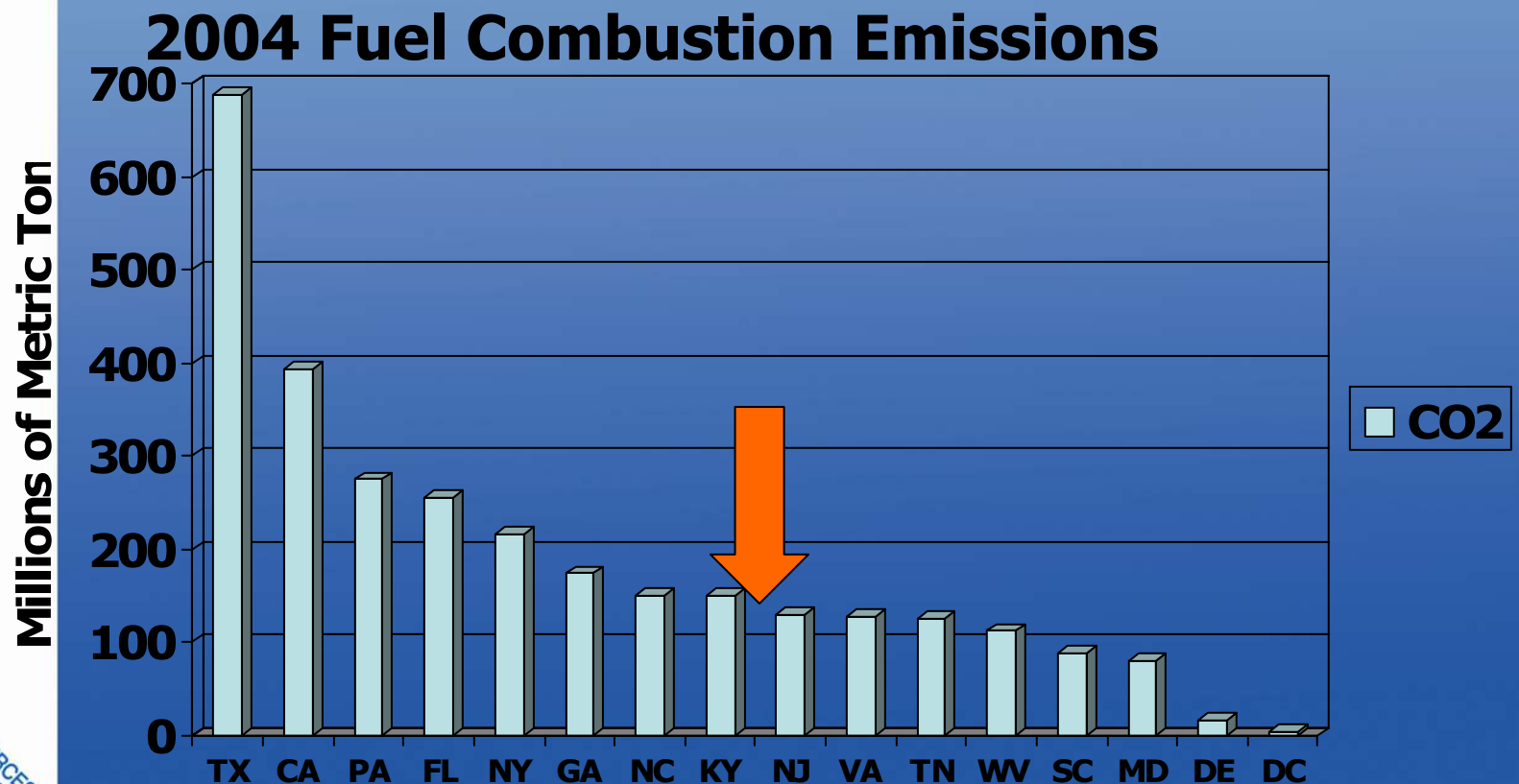
- All other GHG sources - 11%
  - Industrial processes
  - Solid waste management
  - Coal Mining
  - Natural gas/oil production
  - Agriculture
  - Wastewater Management



# 2005 GHG Inventory by Sector



# VA Ranking with Other States



**VA Ranked 17<sup>th</sup> Nationwide**

# Conclusion

- Global and U.S. global warming trends are real.
- State actions can be globally significant – states can make a difference.
- Gov. Kaine has in place a commission to better determine affects on Virginia – and what we can do about it.
- Energy conservation is our first-order approach.
- Mitigation and adaptation to climate change must be planned and executed.
- In Virginia, state and local policymakers are the key.



Thank you.

L. Preston Bryant, Jr.  
Secretary of Natural Resources

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